Abstract

This invention relates to a selective hydrogenation catalyst for the seletive hydrogenation of unsaturated hydrocarbons, a process for preparing this catalyst and its use. The catalyst of the invention comprises supporter, active component Pd, rare earth metals, and auxiliary metal Bi, Ag etc. The catalyst is able to hydrogenate high-unsaturated hydrocarbons such as alkyne with high selectivity at high space velocity while both green oil formation and carbon deposition on catalyst are very low, and it is very applicable to industrial cracking process.